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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/788,975

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EXAMINER

BUEKER, RICHARD R

ART UNIT

PAPER NUMBER

1792

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,975	<b>Applicant(s)</b> MATSUKAZE ET AL.	
	<b>Examiner</b> Richard Bueker	<b>Art Unit</b> 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-6 and 10-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/27/04; 9/07/04; 5/31/07; and 10/10/07.</u>                  | 6) <input type="checkbox"/> Other: ____.                          |



Claims 4-6 and 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 4, in the phrase “an exhauster that is independent to that of said vacuum chamber, the phrase “that of said vacuum chamber” is vague and indefinite because it is unclear what “that of said vacuum chamber” refers to, and it is unclear whether the claimed apparatus is required to include a vacuum chamber exhauster. Also, in claim 10, the phrases “means for forming a first electrode” and “means for forming a second electrode” are means plus function limitations under 35 USC 112, 6<sup>th</sup> paragraph, but the specification fails to disclose the corresponding structure. The specification (see paragraph 37, last line) merely states that any known method can be used to form the electrodes. See *In re Donaldson Co.* 29 USPQ2d 1845. See also the attached memorandum regarding rejections under 35 USC 112, second paragraph, when examining means plus function claim limitations under 35 USC 112, sixth paragraph, particularly the paragraph bridging pages 2 and 3 of the memorandum.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 5, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai (JP 2002-249868) taken in view of Van Slyke I (US 2003/0203638) and Nagashima (US 6,473,564). Kawai (see Figs. 1-5) discloses an

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organic EL thin film manufacturing apparatus comprising a vapor deposition apparatus comprising a line source 62 positioned in a vacuum chamber 20 and a material introducing part 30, wherein a vapor-state organic material is fed into the line source from the material introducing part to form a thin film of the organic material on a substrate disposed inside the vacuum chamber. Kawai (see paragraph 23) teaches that the organic coating material used in his apparatus can be Alq3, which is tris(8-hydroxyquinoline)aluminum, which is a well known and commonly used organic EL material.

Kawai's material introducing part 30 is illustrated in Fig. 1 as being inside the vacuum chamber instead of outside of the vacuum chamber as recited in claim 4. Van Slyke I (see Figs. 4-6, 13 and 14) also discloses an organic EL thin film manufacturing apparatus comprising a vapor deposition apparatus comprising a line source 500VD positioned in a vacuum chamber 130C and a material introducing part 500VS, wherein a vapor-state organic material is fed into the line source from the material introducing part to form a thin film of the organic material on a substrate disposed inside the vacuum chamber, as in Kawai. Furthermore, Van Slyke I teaches (see paragraphs 16 and 65) that it is advantageous to locate the material introducing part 500VS outside of the vacuum chamber 130C, so that the material introducing part 500VS can desirably be detached from the vacuum chamber while maintaining the vacuum pressure in the vacuum chamber. It would have been obvious to one skilled in the art to modify the apparatus of Kawai by providing the material introducing part 30 of Kawai outside of the vacuum chamber so that the material introducing part 500VS could be detached from

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the vacuum chamber while maintaining the vacuum pressure in the vacuum chamber as taught by Van Slyke I.

Also, Van Slyke I (see Fig. 4 and paragraphs 56 and 57, and particularly the last line of paragraph 57) teaches the use of an inert gas source attached to vapor transport conduit 521a below the on-off valve 522 for the purpose of setting the pressure of the material introducing part 500VS independently of the pressure in the vacuum pressure as recited in claim 4.

It is noted also that Van Slyke I intends his apparatus to be used to deposit the organic EL coating materials of the type disclosed in the patents and patent applications listed and incorporated by reference in paragraphs 6, 72 and 73 of Van Slyke I. It is noted also that the organic EL materials taught by these patents include the well known tris(8-hydroxyquinoline)aluminum (Alq3). See, for example, patent no. 4,769,292 to Tang, at col. 8. Also, US patent application 09/875,646, which is incorporated by reference in paragraph 72 of Van Slyke I, and which was published as US 2003/0049489, teaches the use of Alq3, as does US patent application 09/753,091, which is incorporated by reference in paragraph 73 of Van Slyke I, and which was published as US 2002/0127427. Therefore, one skilled in the art would have recognized that Van Slyke I intended his apparatus to be used with the same Alq3 organic EL coating material as is used by Kawai.

Kawai and Van Slyke I do not discuss connecting the material introducing part to "an exhauster that is independent to that of said vacuum chamber" as recited in claim 4. Nagashima (see Fig. 3 and col. 12, line 7 to col. 15, line 7) also discloses an organic EL

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thin film manufacturing apparatus comprising a vapor deposition apparatus comprising a line source 75 positioned in a vacuum chamber 130C and a material introducing part 70, wherein a vapor-state organic material is fed into the line source from the material introducing part to form a thin film of the organic material on a substrate disposed inside the vacuum chamber, as in Kawai. Furthermore, Nagashima teaches that it is desirable to connect a vacuum pump 47, along with an inert gas source 46, to the vapor transport conduit below the on-off valve 45. The vacuum pump 47 of Nagashima is “an exhauster that is independent to that of said vacuum chamber” as recited in applicants’ claim 4. Nagashima teaches (see col. 7, lines 39-45, col. 10, lines 55-59, col. 13, lines 18-27 and claim 8) that this desirably allows the coating material to be degassed to remove any contaminants such as water vapor or air prior to the start of the coating process. It would have been obvious to one skilled in the art to modify the apparatus of Kawai and Van Slyke I by connecting the material introducing part to a vacuum pump exhauster as taught by Nagashima, for the desirable purpose of enabling a degassing step as taught by Nagashima.

It is noted also that Nagashima also teaches (see col. 10, lines 23-40 and 55-59) the use of tris(8-hydroxyquinoline)aluminum (Alq3) as the organic EL used in his apparatus. Since all of the cited references teach the use of Alq3 as the coating material to be vaporized, these references represent analogous art taken from the same field of endeavor.

Regarding claim 5, the material introducing part of each of Kawai, Van Slyke I and Nagashima includes a crucible, a crucible fixing means and a heater.

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Regarding claim 10 recitation of “means for forming a first electrode” and “means for forming a second electrode”, Van Slyke I teaches (see Fig. 1) the step of forming an organic EL device by providing a substrate 11, forming a first electrode 12 on the substrate 11, then forming organic EL layers 13, 14 and 15 on top of a first electrode 12, and then forming a second electrode 16 on top of the organic layers. Furthermore, it is noted that applicants specification (see paragraph 37, last line) includes an admission that the step of forming the first and second electrodes is performed by using a conventional method known in the prior art. It would have been obvious to one skilled in the art to provide known prior art electrode forming means for forming the first electrode 12 and second electrode 16 that are illustrated in Fig. 1 of Van Slyke I.

Further regarding claim 10 it is noted that claim 10 as presently written reads on an electrode forming means that forms two electrodes on two pixel elements of an organic EL display screen, or an electrode forming means that is used twice in two different organic EL device forming processes.

Claims 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai (JP 2002-249868) taken in view of Van Slyke I (US 2003/0203638) and Nagashima (US 6,473,564) for the reasons stated above, and taken in further view of Van Slyke II (2003/0015140). Van Slyke I teaches (see paragraph 55) that his line source 500VD can have the same configuration as any of the tubular sources disclosed in US application 09/843,489, which has been published as US 2003/0015140 (Van Slyke II). Figs. 10, 16D, 16E and 16F of Van Slyke II teach the use of a tubular source having a blocking plate for dispersing vapor as claimed in claim 6. Also, Fig. 10 of Van



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Slyke II illustrates the use of heaters 551, 552 and 553 to regulate the temperature of the tubular line source, which includes regulating the temperature of the blocking plate. It would have been obvious to modify the apparatus of Kawai by providing it with a line source comprising a tubular vapor source having a blocking plate as in Figs. 10, 16D, 16E and 16F of Van Slyke II, because Van Slyke I teaches that this type of tubular source can successfully be used as a line source.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Bueker whose telephone number is (571) 272-1431. The examiner can normally be reached on 9 AM - 5:30 PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on (571) 272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Richard Bueker/  
Primary Examiner, Art Unit 1792